1 118394 122

INTERNATIONAL

MARINE ENGINEERING

VOLUME XXIII

LIBRARY
JUN 25 1938
U. S. PATENT OFFICE

JANUARY TO DECEMBER, 1918

PUBLISHED BY

ALDRICH PUBLISHING COMPANY

6 EAST THIRTY-NINTH STREET, NEW YORK, U. S. A.
8 BOUVERIE STREET, LONDON, E. C.

BUREAU OF STANDARDS
JUN 2 1938
ACCESSION No 5738
CANCELED
CANCELED

INTERNATIONAL

MARINE ENGINEERING

INDEX TO VOLUME XXIII

VM
1
.M15.
CANCELED

By Transfer
Bureau of Standards
APR 27 1937

LIBRARY OF CONGRESS
JUN 24 1938
DUPLICATE
EXCHANGE

INDEX

JANUARY TO DECEMBER, 1918

LIBRARY
JUN 25 1938
U. S. PATENT OFFICE

Note—Illustrated articles are marked with an (*) asterisk.

ARTICLES

Aberthaw Construction Company, concrete boats built by *584
Adaptability to shipbuilding of craftsmen from outside trades 531
Admiral Sims urges shipyard workers to speed up construction 585
Agawam, launch of first government fabricated steel ship *415
Ahlborn, Theodore: Method of concrete ship construction *517
Air pumps, working of, investigated by North-East Coast Institution 113
Alabama, wooden motorship completed on the Pacific coast *361
Alien enemy act 438
Allen Shipbuilding Company builds new type wooden steamer 275
Amberg, E.: Transportation Efficiency for the war *72
American classification for American ships. Marvin 206
American classification for American ships 439
American harbor facilities now in the lead 651
American International Shipbuilding Corporation begins shipbuilding at Hog Island yards *156
American Library Association, books provided for men in United States service by the 382
American merchant marine will total 25,000,000 tons in 1920. Hurley 379
American seaports, increasing the frontage of. Harding 614
American shipping and shipbuilding 617
American ships for foreign trade. Hurley. 497
An appeal to Americans. Hurley 566
Analysis of gas and gasoline high-speed engine design. Ricardo 650
Analysis of shipyard and kindred outside trades used to classify craftsmen for training as shipyard workers 531
Anchor chain industry, electric cast steel, rapid development of. Merrill .. *630
Anderson, John: Most suitable sizes and speeds for general cargo steamers *505
Annual meeting Society of Naval Architects and Marine Engineers 562, 657
Application of buoyancy boxes to the steamship Lucia for the United States Shipping Board. Donnelly 707
Application of electric welding to ship construction. Cox 711
Apprentice, a vital factor in industry. Johnson 567
Assembling and regulating ship's structure. Cohee 534
Auxiliary and propelling machinery for Emergency Fleet must be speeded up, production of *397
Auxiliary schooner building in Texas *209

Baker, Arthur H.: Piping arrangements aboard ship 395
Barge canal, boats for the New York ... 284
Barge canal terminals, New York 305
Barge model built of concrete to test new type of construction 442
Barges and ships, concrete 285
Barges and ships, developments in concrete. Freeman 520
Barges, concrete. Brown *450
Battleship, on board a first-class American. (photographs) 44
Beardmore marine engine, 160 brake horsepower *66
Beams of variable cross sections, vibrations of. Akimoff 710
Beaumont, end-launching of wooden vessel *469
Bending frames for wooden ships 300
Bending moment and shearing force acting on the structure of a ship, investigation of the. Robb 592, 637
Berg Eskil: Electric propulsion of ships .. 477
Big concrete ship not unreasonable. Springer 383
Bion, C. W.: A system for the design of ships with straight-lined sections *335
Bloomfield, Meyer: The shipyard labor problem 272
Boat-lowering appliances. Hodge *532
Boats for the New York barge canal 284
Boilers, preventing waste of coal in. Myers 132
Bolts and nuts, stress distribution in. Stromeyer *589
Books for men in United States service provided by American Library Association 382
Breakdown aboard ship 402
Bridgeport Trade School, shipbuilding department formed in 27
Bristol plant, Shipping Board's *165
British Marine Engineering Design and Construction Committee 63
Brown, Willis L.: Concrete barges *450
Build more wooden ships. Roundy 277
Builders of the Emergency Fleet 169
Building the Hog Island shipyard. Baldwin 104
Building the Ford submarine-chaser "Eagle" *702
Buoyancy boxes, application of, to the steamship Lucia for the United States Shipping Board. Donnelly 707
Burtner, Evers: Oil and watertight joints in ships' hulls *404
Butt straps, analysis of strains in. Stromeyer *589

Campbell, H. Colin: Concrete in marine terminals *221
Canadian wooden shipyard started in Quebec *130
Cargo boat, 9,400 tons deadweight, built by Moore & Scott Iron Works 342
Cargo of pig-iron recovered by lifting magnet, sunken *245
Cargo ship lines of simple form. McEntee *19
Cargo ships, standard. Carter *407
Cargo steamer for Emergency Fleet, 5,000-ton deadweight fabricated (With supplement) *194
Cargo steamer, reinforced concrete *64
Cargo steamers, most suitable sizes and speeds for general. Anderson *505
Cargo steamers, 1,150-ton, design and construction of self-propelled reinforced seagoing, now building in Great Britain. Thurston. (With supplement) *455
Cargo steamship Santa Tecla launched ... *218
Cargo vessels, structural steel standardized. Sutphen 695
Cargo vessel, 1,500-ton, plan of *10
Carnegie Steel Company, 110-inch plate rolling mill *31
Carter, Sir George: Standard cargo ships. 407
Cast steel anchor chain industry, rapid development of electric. Merrill *630
City of Gulfport, steamer *292
Classification for American ships, American 439
Classification for American ships. Marvin 206
Coal, waste in boilers, preventing. Myers 132
Cohee, T. L.: Assembling and regulating ships' structure 534
Colley, George A.: Development of the steel type marine heavy oil engine in the United States 199
Collier, Freeman, 5,450-ton, launch of ... 54
Collier Tuckahoe, 5,000-ton, launch in 37 days *358
Columbia Engineering Works, shipyard of. *294
Concrete barge built to test new type of construction 442
Concrete barge for use on the New York State Barge Canal, standard *586
Concrete barges. Brown *450
Concrete barges and ships 285
Concrete barges and ships, developments in. Freeman 520
Concrete boats built by the Aberthaw Construction Company *584
Concrete cargo steamer, reinforced *64
Concrete in marine terminals. Campbell. *220
Concrete seagoing cargo steamers now building in Great Britain, design and construction of self-propelled reinforced. Thurston. (With suplement) *455
Concrete ship construction, method of. Ahlborn 517
Concrete ship, government attitude on. Fawcett 381
Concrete ship, present status of the. Wig. 711
Concrete ship of 3,500 tons deadweight designed by Emergency Fleet Corporation *446
Concrete ship programme, status of the .. 496
Concrete ship, the big, not unreasonable. Springer 383
Concrete shipbuilding in California, reinforced, 5,000-ton *13
Concrete shipbuilding in Spain. (Photographs) *254
Concrete shipbuilding, history of. Freeman 520
Concrete ships, fallacy of. Everett 61
Concrete shipyard at Wilmington, N. C. Monks 452
Concrete vessels, reinforced. Pollock .. *512
Conradson, P. H.: Internal combustion engine lubrication and lubricants 533
Conservation and stabilization of man power in shipyard 649
Construction and equipment, some insufficiently considered details of ship 570
Construction, ship. Cox 711
Construction of efficient river terminals, principles governing. Harding *479
Construction of Newark Bay shipyard ... *161
Construction of tank steamer. Morrell .. 78
Construction work, magnitude in present-day 498

42138

Control of hull construction of 5,000-ton deadweight fabricated steel vessel, 536, 560, 643
Co-operative management: The Apprentice. Johnson ... 567
Co-ordinated transportation between railways, ocean and rivers. Newlands.... 57
Costs and estimates, shipbuilding. Robertson ... 634, 671
Course of instruction organized for woodworkers at Pratt Institute ... *526
Cranes, electric, new capacities attained by ... 236
Cranes, floating, at Panama. Stanley.... *74
Cruisers of deadrise type, model experiments on. Gamon ... *473

Daugherty type steamer ... *292
Decking, magnesite composition. Selby.. 215
Design, analysis of gas and gasoline high-speed engine. Ricardo ... 650
Design and construction of self-propelled reinforced concrete seagoing cargo steamers now building in Great Britain. Thurston. (With supplement) ... *455
Design of Emergency Fleet Corporation's concrete ship of 3,500 tons deadweight. *446
Design of furnace improved ... 243
Design of ships with straight-lined sections, system for. Bion ... *335
Design of standard concrete barge for use on the New York State Barge Canal... *586
Development of freight handling ... 23
Development of machinery in the United States Navy during the past ten years. Dyson ... 28, 69
Development of terminal facilities. Amberg ... *72
Development of the Diesel type marine heavy oil engine in the United States. Colley ... 199
Developments in concrete barges and ships. Freeman ... 520
Developments in shipyard plants, recent. Henry ... 711
Diesel-engined motorships, contracts awarded for 36 steel, twin-screw ... 496
Diesel-engined ship, protection against fire on ... 137
Diesel engines, marine, McIntosh & Seymour ... *22
Diesel piston cracks ... 116
Diesel type marine heavy oil engine in the United States. Colley ... 199
Directors of merchant shipbuilding in the United States and Great Britain ... *267
Discussion of factors involved in designing small coastwise concrete motorship. Pollock ... *512
Dudley, James G.: Welding ship's parts together by ... *359
Duties of newly trained marine engineers. III. Willey ... *34
Dyson, C. W.: Development of machinery in the United States during the last ten years ... 28, 69

"Eagle" building the Ford submarine chaser ... *702
Easton, W. H.: Motor drive in structural steel shop of Newburgh shipyard ... *400
Economical method of burning fuel oil.. *348
Edna Christenson and Lucinda Hanify, new Pacific coast steam schooners. (With supplement) ... *281
Effect of torpedo explosions on the structure of merchant ships ... 275
Effective arrangement of departments in shipyard organization. Mann ... 615
Efficient production at the Essington Works of Westinghouse Company ... 511
Eight months of U-boat warfare. Passano ... 114
Electric arc, welding ship's parts together by. Dudley ... *359
Electric cast steel anchor chain industry, rapid development of. Merrill ... *630
Electric cranes, new capacities attained by 236
Electric propelling machinery for the battleship Tennessee ... 594
Electric propulsion of ships. Berg ... 477
Electric welding, application of to parts of vessels as approved by American Bureau of Shipping and Lloyd's ... 528
Electric welding, application of to shipbuilding, Lloyd's technical committee investigating ... 530
Electric welding, repairing German vandalism on interned vessels by. Jessop. *122
Electric winches gain favor on motorships ... *343
Emergency fleet, builders of the ... 169
Emergency Fleet Corporation's design of concrete ship, 3,500 tons deadweight... *446
Emergency Fleet Corporation, organization of the. Fawcett ... *150
Emergency Fleet 5,000-ton deadweight fabricated steel cargo. (With supplement) ... *194
Employment manager in our shipyards. Jones ... 612
End-launching of vessels in narrow stream. Hausen ... *469
Engine, Beardmore marine, 160 brake-horsepower ... *66
Engine design, analysis of gas and gasoline high-speed. Ricardo ... 650, 675
Engine lubrication and lubricants, internal combustion. Conradson ... 533
Engine, marine Diesel, McIntosh & Seymour ... *22
Engine, new type of marine oil, Weiss.. *563
Engine, the heavy oil. Lucke ... 579, 625
Engines and ships, standard ... 270
Engines, stopping, on torpedoed ships.. 378
Engineering education as applied to naval architecture and marine engineering. Everett ... 339
Engineering, marine terminal. Harding. 225
Engineering schools established for training deck and engine-room crews.. ... 499
Engineering section of Emergency Fleet Corporation ... 476
Engineers, marine, duties of—III. Willey *34
England's merchant marine founded on coal trade ... 378
Equipment, some insufficiently considered details of ship construction and ... 570
Essington Works of Westinghouse Company, efficient production at ... 511
Everett, H. A.: Engineering education as applied to naval architecture and marine engineering ... 339
Everett, H. A.: The fallacy of concrete ships ... 61
Experiments on cruisers of deadrise type, model. Gamon ... *473
Experiments on simplified ship forms. Sadler and Yamamoto ... 710

Fabricated and straight-lined ships. McAleer ... *234
Fabricated ships, rigid supervision necessary to eliminate errors in assembling.. 534
Fabricated ships, who will build the? Kline ... 55
Fabricated steel cargo steamer for Emergency Fleet. (With supplement) ... *194
Fabricated steel ship Agawam, 5,500 tons deadweight carrying capacity, launch of. *415
Fabricated steel vessel, control of hull construction of 5,000-ton deadweight, 536, 560, 643, 691
Fairmont, steamship ... 27
Faith, cargo steamer, reinforced concrete, *64, 174
Fallacy of concrete ships. Everett ... 61
Fan for ship's port-holes, rain and spray-excluding ... *240
Fawcett, Waldon: Government attitude on the concrete ship ... 381
Fawcett, Waldon: Housing our shipyard workers ... 273
Fawcett, Waldon: The organization of the Emergency Fleet Corporation ... *150
Ferro-concrete shipbuilding in Norway. Skerrett ... *14
Ferro-Concrete ships. Gueritte ... 329
Fire protection of piers. Sackett ... *351
Fire protection on a Diesel-engined ship. 137
First keel laid at Newark Bay yard, 5,000-ton ship ... 9
First launching at Merchant Shipbuilding yard, Harriman, Pa. ... *538
First motorship fitted with reduction gears 279
Five thousand-ton collier built in thirty-seven days ... *358
Floating cranes at Panama. Stanley.... *74
Forbes, W. D.: How to make a stud setter 170
Forced draft, further notes on. Willey.. 241
Ford submarine-chaser, building the "Eagle" ... *702
Foreign trade, American ships for. Hurley ... 497
Foundation Company, shipbuilders ... *387
Four masted schooners built from designs of New York naval architect ... *338
Frames for wooden ships, bending ... 300
Freeman, J. E.: Developments in concrete barges and ships ... 520
Freight handling at the Panama Canal... *25
Freight handling, development of ... 23
Freight ship of French design, unsinkable ... *577
French design of an unsinkable freight ship ... *577
Frontage of American seaports, increasing the. Harding ... 614
Frost, Meigs O.: New Orleans trains navigating and engineering officers for America's new merchant marine ... 417
Fuel oil, economical method of burning.. *348
Furnace design can be improved ... 243
Further notes on forced draft. Willey.. 241
Future of the German merchant marine.. 417

Gamon, T. A.: Model experiments on express cruisers of deadrise type ... *473
Gas and gasoline high-speed engine design, analysis of. Ricardo ... 650, 675
General Combustion Company devises economical method of burning fuel oil. *348
General Electric Company develops thermostatic metal to control appliances by heat or cold ... *17
German merchant marine, future of the. 417
Government attitude on the concrete ship. Fawcett ... 381
Great floating cranes at Panama. Stanley ... *74
Great Lakes shipping ... 219
Gueritte, T. J.: Ferro-concrete ships.... 329
Gulf coast shipyard solves housing problem ... *129
Gut Heil, salvage of the German tanker. Skerrett ... *345

Hansen, Max: End launching of vessels in narrow stream ... *469
Harbor facilities now in the lead, American ... 651
Harbor improvement work, New Orleans rushes ... 511
Harbor of Seattle. Norton ... *568
Harding, H. McL.: Increasing the frontage of American seaports ... 614
Harding, H. McL.: Marine terminal engineering ... 225
Harding: Marine terminals for inland river cities located on high ground.... *479
Heavy oil engine, development of Diesel in the United States. Colley ... 199
High-speed engine design, analysis of gas and gasoline. Ricardo ... 650, 675
Highly superheated steam used on steamship Pearl Shell ... *304
History of concrete shipbuilding. Freeman ... 520
Hodge, J. R.: Boat-lowering appliances. *532

Hog Island shipyard, building the. Baldwin 104
Hog Island, the greatest shipyard in the world 678, 711
Hog Island yard launches its first ship.. *503
Hog Island yard starts building ships... *156
Horton, Charles M.: Methods used at Shooter's Island for constructing standard ships *618
Horton, Charles M.: Salvaging the steamship St. Paul *644
Housing construction, industrial..... 438
Housing problem solved by Gulf coast shipyard *129
Housing our shipyard workers. Fawcett. 273
How can soft coal be burned without smoke in marine boilers?..... 466
How can we build more ships? Powell.. 271
How local business organizations can help in transportation of shipyard workers. 279
How modern welding processes save time of ships in dry dock for repairs..... *228
How to make a stud setter. Forbes..... 170
How to order pipe fittings..... 419
Howard, Henry: Manning the new merchant marine 499
Howard, Henry: Our new merchant marine 155
Hull construction of 5,000-ton deadweight fabricated steel vessel, control of, 536, 560, 643, 671
Hurley, Edward N.: American merchant marine will total 25,000,000 tons in 1920 379
Hurley, Edward N.: American ships for foreign trade 497
Hurley, Edward N.: An appeal to Americans 566
Hurley, Edward N.: To the shipbuilders of America 149
Hurley, Edward N.: "What the Shipping Board Has Done" 268

Increasing the frontage of American seaports. Harding 614
Industrial housing construction 438
Inland river cities located on high ground, marine terminals for. Harding..... *479
Inland waterways—co-ordinated transportation between railways, oceans and rivers. Newlands 57
Internal-combustion engine lubrication and lubricants. Conradson 533
International Concrete Ship Association, new organization formed to boost building of concrete ships 522
Investigation by Port and Harbor Development Commission 501
Investigation of the shearing force and bending moment acting on the structure of a ship, including dynamic effects. Robb *592, 637
Isaac Foss, motor boat operated by producer gas *133
Isherwood system of ship construction, growth of 133
Jackson, A. R.: Large motor passenger vessel 232
Japan's shipbuilding..... 471
Jessop, E. P.: Repairing German vandalism on interned vessels by electric welding *122
Johnson, Arthur F.: Co-operative management: the apprentice..... 567
Joints, oil and watertight, in ships' hulls. Burtner *404
Jones, Edward D.: The employment manager in our shipyards..... 612

Keel laid at Newark Bay yard, first..... 9
Kline, N. E.: Who will build fabricated ships 55

Labor problem, overcoming at the Newburgh Shipbuilding Company plant.... *524
Labor problem, shipyard. Bloomfield... 272
Launch of collier Freeman..... 54
Launching apparatus by means of trigger *642
Launching, notes on. Gatewood 709
Launching of ships on the Great Lakes, side. Hopkins 709
Launching of vessel in narrow stream... *469
Launching the first government fabricated steel ship..... *415
Laying off tank margin plates, handy method for. Ridley..... *528
Lengthening ships to increase their capacity 636
Liberty Mill, the *31
Life-saving equipment for Uncle Sam's fleet. Lundin..... 127
Link, W. M.: Safety and relief valves, *172, 301
Lloyd's Technical Committee thoroughly investigating application of electric welding to shipbuilding..... 530
Lower Mississippi as an arm of the sea. von Pagenhardt..... 59
Lowering appliances, boat. Hodge..... *532
Lubrication and lubricants, internal-combustion engine. Conradson..... 533
Lucke, Charles E.: The heavy oil engine, 579, 625
Lucinda Hanify and Edna Christenson, new Pacific coast steam schooners. (With supplement) *281
Lundin, A. P.: Life-saving equipment for Uncle Sam's fleet..... 127

Machinery development in United States Navy. Dyson.....28, 69
Machinery for Emergency Fleet, production of propelling and auxiliary must be speeded up..... *397
Machinery for motorships, propelling. Watts *201
Machinery for the battleship Tennessee, electric propelling..... 594
Magnesite composition decking. Selby... 215
Magnitude in present-day construction work 498
Main Street Iron Works' expansion engine installed in new Pacific coast steam schooners. (With supplement)..... *281
Man power in shipyard, stabilization and conservation of..... 649
Management, co-operative, the apprentice. Johnson 567
Manager, employment, in our shipyards. Jones 612
Mann, G. F. S.: Effective arrangement of departments in shipyard organization.. 615
Manning the new merchant marine.... 6
Manning the new merchant marine. Howard 499
Marine Engineering Design and Construction Committee, British..... 63
Marine engineering, research in. Seaton. 420
Marine engineers, duties of.—III. Willey *34
Marine oil engine, new type of, Weiss.. *563
Marine terminal engineering. Harding.. 225
Marine terminals, concrete in. Campbell. *220
Marine terminals for inland river cities located on high ground. Harding.... *479
Marvin, Winthrop L.: American classification for American ships..... 206
McAleer, John A.: Straight-lined and fabricated ships..... *234
McIntosh & Seymour marine diesel engines *22
Mercantile marine—An appeal to Americans. Hurley..... 566
Merchant commerce, what is happening with the world's great..... 239
Merchant marine administration and operation, university training in..... 438
Merchant marine, American, will total 25,000,000 tons in 1920. Hurley..... 379
Merchant marine, England's, founded on coal trade..... 378
Merchant marine, future of the German.. 417
Merchant marine in March, 1918, Norway's 442
Merchant marine, manning the new..... 6
Merchant marine, manning the new. Howard 449
Merchant marine, New Orleans trains navigating and engineering officers for America's new. Frost..... *417
Merchant marine, our new. Howard... 155
Merchant Shipbuilding Corporation begins work at Bristol plant..... *165
Merchant shipbuilding in the United States and Great Britain, directors of. *267
Merchant shipping for the war and after. 323
Merrill, W. L.: Rapid development of the electric cast steel anchor chain industry *630
Metal, thermostatic, developed by General Electric Company..... *17
Method for laying off tank margin plates. Ridley *528
Method of burning fuel oil, economical.. *348
Method of concrete ship construction. Ahlborn 517
Method of determining most economical dimensions of cargo vessels for any length of voyage, condition of loading and speed. Anderson..... *505
Methods used at Shooter's Island for constructing standard ships. Horton..... *618
Mietz & Weiss Company develop new type of marine oil engine..... *563
Mississippi, lower, as an arm of sea. von Pagenhardt..... 59
Model experiments on express cruisers of deadrise type. Gamon..... *473
Modified design of standard tanker.... 413
Moore & Scott Iron Works, standard cargo boat built by..... 342
Morrell, Robert W.: Tank steamer construction 78
Morse school for shipfitters..... 190
Most suitable sizes and speeds for general cargo steamers. Anderson..... *505
Motor boat, Isaac Foss, operated by producer gas..... *133
Motor coaster, reinforced concrete. Pollock *512
Motor drive in structural steel shop of Newburgh shipyard. Easton..... *400
Motor passenger vessel. Jackson..... 232
Motorship Alabama, 3,600-ton deadweight, completed on Pacific coast, wooden.... *361
Motorship fitted with reduction gears, first 279
Motorships and their propelling machinery. Watts..... *201
Motorships coming into their own..... 496
Motorships, shallow draft with plans of 1,500-ton cargo vessels and 3,500-ton oil tankers..... *10
Myers, David Moffatt: Preventing waste of coal in boilers..... 132

Namsenfjord, ferro-concrete ship of 200 tons *14
Naval Architects and Marine Engineers, annual meeting of 262, 657
Naval Architects' annual meeting..... 706
Navigating and engineering officers for America's new merchant marine. Frost *417
Need for new waterways 690
Nelson, Fred N.: Plan for simplifying and standardiing template construction suggested by a practical shipbuilder. ..467
New capacities attained by electric mranes 236
New Orleans rushes harbor improvement work 511
New Orleans trains navigating and engineering officers for America's new merchant marine. Frost *417
New Pacific coast steam schooners. (With supplement) *281
New type of construction for wooden steamer designed by Lee & Brinton of Seattle 275
New type of marine oil engine *563
New types of wooden ships building in Texas *292
New York barge canal, boats for the..... 284

New York barge canal terminals..... 305
New York, port of, capable of expansion. 501
New Pork Scate Barge Canal, standard concrete barge for use on..... *586
Newark Bay shipyard, construction of.... *161
Newark Bay yard, first keel laid..... 9
Newburgh Shipbuilding Company plant trains workers to overcome labor problem *524
Newburgh shipyard, motor drive in structural steel shop of. Easton..... *400
Newlands, Honorable Francis G.: Inland waterways—co-ordinated transportation between railways, ocean and rivers.... 57
Nobel Bros. Company, Petrograd, accept American plans for shallow-draft motor ships *10
Norton, Charles Phillip: Seattle's new war industries *212
Norton, Charles Phillip: The port of Seattle *568
Norway's merchant marine in March, 1918 442
Notes on forced draft, further. Willey.. 241
Notes on launching. Gatewood 709
Notes on progress of turbine ship propulsion. Hodgkinson 708

Oil- and water-tight joints in ships' hulls. Burtner *404
Oil engine, development of Diesel type in the United States. Colley 199
Oil engine, new type of marine, Weiss.. *563
Oil engine, the heavy. Lucke 579, 625
Oil fuel for steamships..... 533
Oil tanker of 10,000 tons deadweight adopted as standard by Shipping Board. (With supplement) *107
Oil tanker, 3,500-ton, plan of..... *10
Oregon contributes first wooden steamship to Emergency Fleet *470
Organization, effective arrangement of departments in. Mann 615
Organization formed to boost building of concrete ships 522
Organization of the Emergency Fleet Corporation. Fawcett *150
Our new merchant marine. Howard.... 155
Overcoming the labor problem at the Newburgh Shipbuilding Company plant.... *524
Oxy-acetylene welded joints, tests of.... 39
Oxy-acetylene welding and the steel ship. Springer 699

Pacific Coast Shipbuilding Company constructing large new shipyard..... 233
Pacific coast steam schooners, new. (With supplement) *281
Passano, Leonard M.: Eight months of U-moat warfare *114
Passenger vessel, large motor. Jackson.. 232
Patents, selected marine....*50, 96, 146, 264, 320, 376
Pearl Shell, steamship, highly superheated steam used on *304
Piers, fire protection of. Sackett..... *351
Pipe fittings, how to order..... 419
Pipe, proper designation for..... 378
Piping arrangements aboard ship. Baker. 395
Piston cracks, Diesel 116
Plan for simplifying and standardizing template construction suggested by practical shipbuilder. Nelson 467
Plate mill, 110-inch rolling, Carnegie Steel Company *31
Pneumatic riveting and rivet shortage... 578
Pollock, Walter: Reinforced concrete vessels *512
Port of New York capable of expansion. 501
Port of Seattle. Norton *568
Powell, John W.: Shipbuilding situation. 7
Powell, Joseph W.: How can we build more ships? 271
Power plant saving, programme of..... 465
Present status of the concrete ship. Wig. 711
Preservation of wood in connection with building of wharves and docks. von Schrenk *230
Preventing waste of coal in boilers. Myers 132
Principles governing construction of efficient river terminals. Harding..... *479
Producer gas plant proves economical on harbor work boat..... *133
Production of propelling and auxiliary machinery for Emergency Fleet must be speeded up *397
Programme of power plant saving..... 465
Progress in the development of freight handling 23
Progress of turbine ship propulsion, notes on. Hodgkinson 708
Propeller shaft and broken propeller..... *344
Propelling and auxiliary machinery for Emergency Fleet, production must be speeded up *397
Propelling machinery for battleship Tennessee, electric 594
Propelling machinery for motorships. Watts *201
Proper designation for pipe 378
Propulsion of ships, electric. Berg..... 477
Protection against fire on Diesel-engined ship 137

Quistconck, steamship, launched..... *503

Rain and spray-excluding fan for ship's port-holes *240
Rapid construction of large new shipyard on Pacific coast near San Francisco... 233
Rapid development of the electric cast steel anchor chain industry. Merrill... *630
Recent developments in shipyard plants. Henry 711
Reduction gears, first motorship fitted with 279
Reinforced concrete cargo steamer of 5,000 tons. (With supplement)..... *64
Reinforced concrete ship building in California, 5,000-ton *13
Reinforced concrete vessels. Pollock.... *512
Relief and safety valves. Link.....*172, 301
Repair of ships in dry dock by modern welding processes *228
Repairing German vandalism on interned vessels by electric welding. Jessup.... *122
Research in marine engineering. Seaton. 420
Results obtained with electric drive on the Jupiter. Berg 477
Revival of wooden shipbuilding as a war industry. de Zafra 707
Ricardo, Henry R.: Analysis of gas and gasoline high-speed engine design....650, 675
Rickcord, R. V.: Training shipyard workers at Staten Island..... 101
Rickcord, R. V.: Training shipyard workers by Emergency Fleet Corporation methods..... *325
Ridley, J. A.: Handy method for laying off tank margin plates..... *528
Riveting and rivet shortage, pneumatic.. 578
Robb, A. M.: Investigation of the shearing force and bending moment acting on the structure of a ship, including dynamic effects.....*592, 637
Roundy, H. J.: Build more wooden ships. 277
Rules, Steamboat Inspection, amended... 416

Sackett, Frank V.: Fire protection of piers *351
Safety and relief valves. Link.....*172, 301
St. Paul, of 11,629 gross tons, salvaging the steamship. Horton..... *644
Salvage of the German tanker Gut Heil. Skerrett *345
Salvaging the steamship St. Paul. Horton. *644
San Francisco's Shipbuilding Company's 5,000-ton reinforced concrete ship.... *13
Santa Tecla launched, cargo steamship.. *218
Scarphing machine, Skinner & Eddy.... *291
School for shipfitters, Morse..... 190
Schools established for training deck and engine room crews..... 499
Schooner building in Texas, auxiliary.... *209
Schooners built from designs of New York naval architect, four-masted..... *338
Schooners, steam, new Pacific coast (With supplement)..... *281
Schwab's Fourth of July address to the shipyard workers in San Francisco.... 440
Score board, shipyard..... *347
Seaports increasing the frontage of American. Harding..... 614
Seaton, A. E.: Research in marine engineering 420
Seattle, port of. Norton..... *568
Seattle speeds up shipbuilding..... *210
Seattle's new war industries. Norton... *212
Selby, G. W.: Magnesite composition packing 215
Service department of a shipyard. Wakeman 37
Shallow draft motorships for use on Volga River designed by American naval architect for Russian owners.... *10
Shearing force and bending moment acting on the structure of a ship, investigation of the, including dynamic effects. Robb *592 637
Ship construction. Cox 711
Ship construction and equipment, some insufficiently considered details of.... 570
Ship construction, growth of Isherwood system 133
Ship construction, method of concrete. Ahlborn 517
Ship forms, experiments on simplified. Sadler and Yamamoto 710
Ship lines of simple form, cargo. McEntee *19
Ship, present status of the concrete. Wig. 711
Ship propulsion. notes on progress of turbine. Hodgkinson 708
Ship, reinforced concrete, 5,000-ton..... *13
Ship, the steel, and oxy-acetylene welding. Springer 711
Ships, American classification for American 439
Ships and barges, developments in concrete. Freeman..... 520
Ships and engines, standard..... 270
Ships, bending frames for wooden..... 300
Ships, build more wooden. Roundy.... 277
Ships, concrete barges and..... 285
Ships designed with straight-lined sections, system for. Bion..... *335
Ships, electric propulsion of. Berg.... 477
Ships, fallacy of concrete. Everett..... 61
Ships, ferro-concrete. Gueritte..... 329
Ships for foreign trade, American. Hurley 497
Ships, how can we build more. Powell.. 271
Ships, lengthening to increase their capacity 636
Ships, methods used at Shooter's Island for constructing standard. Horton... *618
Ships requisitioned or under contract for United States Shipping Board..... 171
Ships, standard cargo. Carter..... *407
Ships, straight-lined and fabricated. McAleer *234
Ship's structure, assembling and regulating. Cohee..... 534
Ships under construction in the United States total nearly 14,000,000 tons.... 443
Ships welded with electric arc. Dudley.. *359
Ships, what do they mean to you?..... 556
Ships, who will build the fabricated. Kline 55
Shipbuilders engaged in building vessels for the new American merchant marine. 169
Shipbuilders of America, to the. Hurley. 149
Shipbuilders, the Foundation Company.. *387
Shipbuilding, adaptability to, of craftsmen from outside trades..... 531
Shipbuilding and general marine news, 45, 90, 140, 255, 312, 368, 430, 488, 546, 602, 658, 718
Shipbuilding costs and estimates. Robertson 634, 671
Shipbuilding department formed in Bridgeport Trade School..... 27
Shipyard plants, recent developments in. Henry 711

Shipbuilding in Japan 471
Shipbuilding in Spain, concrete. (Photographs) *254
Shipbuilding in the United States and Great Britain, directors of merchant.. *267
Shipbuilding programme, status of the concrete 496
Shipbuilding, Seattle speeds up..... *210
Shipbuilding situation..... 7
Shipfitters, Morse school for..... 190
Shipping and shipbuilding, American.... 617
Shipping Board, what it has done. Hurley 268
Shipping Board's Bristol plant..... *165
Shipping, Great Lakes..... 219
Shipping for the war and after, merchant 323
Shipyard at Bristol, Pa., for Shipping Board *165
Shipyard at Shooter's Island..... *191
Shipyard at Wilmington, N. C., concrete. Monks 452
Shipyard, building the Hog Island. Baldwin 104
Shipyard, conservation and stabilization of man power in..... 649
Shipyard, construction of Newark Bay.. *161
Shipyard labor problem. Bloomfield.... 272
Shipyard notes....46, 91, 141, 258, 312, 374, 430, 491, 547, 577, 658, 719
Shipyard of the Columbia Engineering Works *294
Shipyard of the Sun Shipbuilding Company *175
Shipyard on Gulf coast solves housing problem *129
Shipyard on Pacific coast near San Francisco 233
Shipyard organization, effective arrangement of departments in. Mann..... 615
Shipyard score board..... *347
Shipyard, service department of. Wakeman 37
Shipyard starts work, Hog Island..... *156
Shipyard, wooden, started in Quebec.... *130
Shipyard workers, housing our. Fawcett. 273
Shipyard workers, how local business organizations can help in transportation of 279
Shipyard workers trained at Staten Island. Rickcord..... 101
Shipyard workers trained by Emergency Fleet Corporation methods. Rickcord. *325
Shipyard workers urged to speed up construction 585
Shipyards and shops in Great Britain, what women are doing in the..... *403
Shipyards, the employment manager in our. Jones 612
Shipyards of America have output for year amounting to 1,430,793 gross tons. 444
Shipyards, workers for..... *99
Shooter's Island, methods used at, for constructing standard ships. Horton... *618
Shooter's Island shipyard..... *191
Side launching of ships on the Great Lakes. Hopkins 709
Simplified ship forms, experiments on. Sadler and Yamamoto 710
Sizes and speeds for general cargo steamers, most suitable. Anderson..... *505
Skerrett, Robert G.: Ferro-concrete shipbuilding in Norway *14
Skerrett, Robert G.: Salvage of the German tanker Gut Heil..... *345
Skinner and Eddy scarphing machine.... *291
Smoke in marine boilers, how can soft coal be burned without? 466
Society of Naval Architects and Marine Engineers, annual meeting of.....562, 657
Soft coal, how it can be burned in marine boilers without smoke 466
Some insufficiently considered details of ship construction and equipment. Cairns 570
Springer, J. F.: The big concrete ship not unreasonable 383
Springer, J. F.: The steel ship and oxy-acetylene welding 699
Stabilization and conservation of man power in shipyard 649
Standard cargo boat built by Moore & Scott Iron Works 342
Standard cargo ships. Carter..... *407
Standard concrete barge for use on the New York State Barge Canal..... *586
Standard ships and engines 270
Standard ships, methods used at Shooter's Island for constructing. Horton..... *618
Standard Shipbuilding Corporation constructs standard ships at Shooter's Island *618
Standard tanker, modified design of..... 413
Standardized cargo vessels, structural steel. Sutphen..... 695
Stanley, Frank A.: Great floating cranes at Panama *74
Status of the concrete ship programme. 496
Steam schooners, 1,497-ton, Pacific coast. (With supplement) *281
Steam turbines, Tosi marine *117
Steamboat inspection rules amended.... 416
Steamer City of Gulfport, 1,670 net tonnage *292
Steamer Faith, 5,000-ton reinforced concrete *64
Steamer, 5,000-ton cargo, for Emergency Fleet, fabricated steel. (With supplement) *194
Steamer, 3,650-ton, new type of construction for wooden 275
Steamer, War Mystery, 4,700-ton deadweight *292
Steamers, large tramp, recommended for British inter-Imperial ship lines..... 237
Steamers, most suitable sizes and speeds for general cargo. Anderson..... *505
Steamship Beaumont, wooden, end-launching of vessel in narrow stream. Hausen *469
S. S. Fairmont, 8,600-ton 27
Steamship Pearl Shell, 5,845 gross tonnage, highly superheated steam used on. *304
Steamship St. Paul, salvaging the. Horton *644
Steamship Santa Tecla, 3,800 tons, launched *218
Steamship Quistconck, 7,500-ton deadweight, launched *503
Steamship War Mystery, largest wooden vessel launched *216
Steamship Wasco, 3,600 tons, wooden... *470
Steamship Watonwan, about 7,400 tons capacity, launching of *538
Steel ship and oxy-acetylene welding. Springer 699
Stopping the engines on torpedoed ships. 378
Straight-lined and fabricated ships. McAleer *234
Stress distribution in bolts and nuts. Stromeyer *589
Stromeyer, C. E.: Stress distribution in bolts and nuts *589
Structural steel shop of Newburgh shipyard, motor drive in. Easton..... *400
Structural steel standardized cargo vessels. Sutphen 695
Stud setter, how to make a. Forbes.... 170
Submarine Boat Corporation constructs shipyard at Newark Bay *161
Submarine Boat Corporation launches first government fabricated steel ship.. *415
Submarine-chaser, building the Ford "Eagle" *702
Sun Shipbuilding Company design of 10,000-ton deadweight oil tanker adopted as standard by Shipping Board. (With supplement) *107
Sun Shipbuilding Company, shipyard of the *175
Sunken cargo of pig-iron recovered by lifting magnet *245
Superheated steam used on steamship Pearl Shell, Highly *304
System for design of ships with straight-lined sections. Bion *335
System of watertight doors. Toro..... *76
Tank margin plates, handy method for laying off. Ridley *528
Tank steamer construction. Morrell.... 78
Tanker Gut Heil, 6,000-ton, salvage of the German. Skerrett *345
Tanker, modified design of standard..... 413
Tarver Shipbuilding Corporation building auxiliary schooner in Texas..... *209
Template construction, plan for simplifying and standardizing suggested by practical shipbuilder. Nelson 467
Terminal engineering, marine. Harding. 225
Terminal facilities, development of. Amberg *72
Terminal facilities for the New York Barge Canal 305
Terminal facilities, "trackless train," at New York piers *289
Terminals, concrete in marine. Campbell. *220
Terminals, marine for inland river cities located on high ground. Harding..... *479
Tests of oxy-acetylene welded joints in steel plates 39
The heavy oil engine. Lucke.....579, 625
Thermostatic metal, developed by General Electric Company to control appliances by heat or cold, applicable to marine work *17
Three Rivers Shipyards, Ltd., start new wooden shipyard in Quebec..... *130
Thurston, T. G. Owens: Design and construction of self-propelled reinforced concrete seagoing cargo steamers now building in Great Britain. (With supplement) *455
To the shipbuilders of America. Hurley.. 149
Tonnage of ships under construction in the United States totals nearly 14,000,000 443
Tonnage output of American shipyards for year amounts to 1,430,793 gross tons 444
Tonnage, why is? *244
Toro, I.: Watertight doors *76
Torpedo explosions of merchant ships, effect of 275
Torpedoed ships, stopping engines on.... 378
Tosi marine steam turbines *117
"Trackless train" on New York piers.... *289
Training shipyard workers at Staten Island. Rickcord 101
Training shipyard workers by Emergency Fleet Corporation methods. Rickcord.. *325
Training workers for wooden shipyards. *526
Tramp steamers recommended for British inter-Imperial ship lines, large..... 237
Transportation between railways, ocean and rivers, co-ordinated. Newlands... 57
Transportation efficiency for the war. Amberg *72
Transportation of shipyard workers, how local business organizations can help in. 279
Trigger apparatus as safety factor at launchings *642
Tuckahoe, collier launched in 37 days... *358
Turbine ship propulsion, notes on progress of. Hodgkinson 708
Turbines, Tosi marine steam..... *117
Types of wooden ships building in Texas. *292

U-boat warfare, eight months of. Passano *114
University training in merchant marine administration and operation..... 438
Unsinkable freight ship of French design. *577

Valves, safety and relief. Link....*172, 301
Variations of shaft horsepower, propeller revolutions and propulsive coefficient with longitudinal positions of the parallel middle body in a single-screw cargo ship. McEntee 710
Vessels requisitioned or under contract for United States Shipping Board.... 171
Vibrations of beams of variable cross section. Akimoff 710

Von Pagenhardt, M.: The lower Mississippi as an arm of the sea..... 59
Von Schrenk, Hermann: The preservation of wood in connection with the building of wharves and docks..... *230

Wakeman, Samuel W.: Service department of a shipyard..... 37
War Industries, Seattle's. Norton..... *212
War Mystery, 4,700-ton deadweight steamer *292
War Mystery, largest wooden vessel launched *216
Wasco, first wooden steamship completed for Emergency Fleet Corporation..... *470
Watertight and oiltight joints in ships' hulls. Burtner..... *404
Watertight doors. Toro..... *76
Waterway plan, what Italy is doing with a big inland 595
Waterways, need for new..... 690
Watonwan, first launching of steamship at Merchant shipbuilding yard, Harriman, Pa..... *538
Watts, J. Murray: Motorships and their propelling machinery..... *201
Welded joints, oxy-acetylene, tests of.... 39
Welding, electric, application of, to parts of vessels as approved by American Bureau of Shipping and Lloyd's..... 528
Welding, electric, application of to shipbuilding, Lloyd's Technical Committee investigating 530
Welding, electric, repairing German vandalism on interned vessels by. Jessop. *122
Welding processes save time of ships in dry dock for repairs..... *228
Welding ship's parts together. Dudley.. *359
Welding, the steel ship and oxy-acetylene. Springer 699
Weiss oil engine, new type of..... *563
What do ships mean to you?..... 556
What is happening with the world's great merchant commerce?..... 239
What Italy is doing with a big inland waterway plan..... 595
"What the Shipping Board has done." Hurley 268
What women are doing in the shipyards and shops in Great Britain..... *403
Who will build the fabricated ships? Kline 55
Why is tonnage?..... *244
Willey, C. H.: Duties of newly trained marine engineers on merchant vessels.—III *34
Willey, C. H.: Further notes on forced draft 241
Winches, electric, gain favor on motorships *343
Women, what they are doing in the shipyards and shops in Great Britain..... *403
Wood in connection with building of wharves and docks, preservation of. von Schrenk..... *230
Wooden motorship Alabama completed on the Pacific coast..... *361
Wooden ships, build more. Roundy.... 277
Wooden ships, new types of, building in Texas *292
Wooden shipbuilding as a war industry, revival. de Zafra 707
Wooden shipyard started in Quebec..... *130
Wooden steamer designed by Lee & Brinton, of Seattle, new type of construction 275
Wooden steamship Wasco..... *470
Woodworkers, course of instruction organized at Pratt Institute..... *526
Workers for the shipyards..... *99
Workers, shipyard, training at Staten Island. Rickcord..... 101
Working of air pumps investigated by North-East Coast Institution..... 113

Year's output of American shipyards amounts to 1,430,793 gross tons..... 444

COMMUNICATIONS

A few wrinkles. Willey..... *306
A kink..... *712
Accident, unique marine. Haas..... 87
Adapting flue scraper handle for restricted locations. Lailer..... *483
Adjusting marine engine bearings. McRobert *307
American prerogative, an. Marvin..... 439
Aid in removing condenser heads. Lailer *485
An understudy..... 40
Ash bucket, light weight..... *542
Arbor brace for use at bench..... *654
Arrangement of hack-saw handle to hold different length blades. Lailer *540
Attachment for solid-jaw vise. Willey.. *306

Bearings, adjusting marine engine. McRobert *307
Bearings, device for twin-screw propeller. Raabe *543
Bearings of propeller shaft on board ship, formulas for determining the sag in wire used to aline *426
Boiler cleaning platform *136
Broken circulating pump rod. Dell..... *597
Broken shovel handle. Willey..... *715
Buffing wheel *485
Bulletin board clips *541
Bunker coal spreader. Willey *362
Bushing kinks. Willey *363

Cable eye kink *599
Cargo record. Haas 482
Chain falls strongback. Watch..... *306
Chart for comparing costs. Schaphorst.. *482
Checking board, handy *652
Circulating pump rod, broken. Dell..... *597
Clamp for holding screws *654
Clamps, planer *306
Clips for bulletin board *541
Close-quarter saw. Willey *599
Coal bucket, durable. Willey..... *540
Condenser heads, an aid in removing. Lailer *485
Connector board, multiple *542
Container, shellac. Willey..... *424
Convenient method of feeding grease cups. Lailer *484
Co-operative management. Forbes..... 4
Costs, chart for comparing. Schaphorst.. *482
Cow-mouth scraper *483
Crank pin, loose. Willey *40
Crank pits, handy pick-up for..... *714
Curing trouble from noisy return lines. Lailer *597
Curious displacement of slide valve. Dell. *596
Cutter, rod packing *246
Cylinder, repairs on cracked pump. Knoblauch *84

Device for locking engine throttle valve.. *655
Device for twin-screw propeller bearings. Raabe *543
Diesel-engined ship, protection against fire on 137
Drain silencer, feed tank *251
Drawer, quickly accessible. Willey..... *653
Drill adapted as a portable countersinking machine, pneumatic. Hicks..... *362
Durable coal bucket. Willey..... ..... *540
Dutchman for shaft coupling, improvised. *246

Electric wiring, use of telephone for finding shorts in. Walker *85
Electrical kinks, two. Lailer..... *484
Emergency repairs to main check valve spindle. Dell *653
Emergency repairs to stripped stud. Willey *306
Emery cloth sticks for polishing work... *715
Engine bearings, adjusting marine. McRobert *307
Engine, indicator test of triple-expansion marine. De Lorme 250
Engine, reciprocating, return to the. London 5
Engine, return to the reciprocating. Gibson 53
Engine throttle valve, device for locking. *655
Evaporator ram pump, repairs to. Blundun *134
Expansion joint, welded steel. Nourse.. *426

Facilitating the grinding down of steel keys *599
Feed tank drain silencer *251
Fire on Diesel-engined ship, protection against 137
Fire on motorship Sebastian not caused by hot exhaust pipe. Lisle 309
Flue scraper handle adapted for restricted locations. Lailer *483
Forced lubrication on a thrust block. Menzies 136
For your own note book..... *715
Formulas for determining the sag in wire used to aline the bearings of propeller shafting on board ship. Mason..... 424
Fresh water, proposed method of obtaining on ships..... 712

Gage alarm *540
Gasket punch block. Willey *655
Gate valve and water release connection. Dorthen *598
Glands. Dell *653
Grease cups, convenient method of feeding. Lailer *484
Grease gun. Dorthen *598
Grinding down of steel keys, facilitating the *599

Hack-saw handle, arrangement to hold different length blades. Lailer *540
Hammer, improvised soft-faced *424
Handy babbitting ladle *483
Handy checking board *652
Handy pick-up for crank pits..... *714
Handy pump *247
Handy repairing kinks. Willey..... *715
Handy rigging helps. Willey..... *134
Handy scaling tool *426
Handy tool for cleaning out threads.... *541
Home-made rod shear *653
Hose kink for suction lines. Lailer..... *599
Hose on boiler tube cleaners, saving. Lailer *655
How to keep main feed pump gland tight. *713

Improvised Dutchman for shaft coupling. *246
Improvised soft-faced hammer..... *424
Indicator test of triple-expansion marine engine. De Lorme 250
Iron and steel, preserving..... 712

Keeping the sight glass clean. Willey... *85
Key extractor *483
Kink, a..... *712
Kink for tightening key..... *714
Kinks, bushing. Willey *363
Kinks from the note book. Willey..... *86
Kinks, handy repairing. Willey..... *715
Kinks, oil can *135
Kinks, reach rod *485
Kinks, two *485
Kinks, two lathe *135
Kinks, two shop *654

Ladle, handy babbitting *483
Lathe kinks, two *135
Learn to like your work..... 424
Letter writing 542
Light stand, portable floor. Willey..... *598
Light weight ash bucket *542
Lock nuts *40
Long jaw toggle clamp. Willey..... *484
Loose crank pin. Willey *40
Lubrication, forced, on a thrust block. Menzies 136

Main feed pump gland, how to keep tight *712

Make-up feed telltale *713
Management, co-operative. Forbes..... 4
Marine engine bearings, adjusting. McRobert *307
Marking tools 134
Mercantile marine uniforms. Haas..... 364
Metrod of detecting leaky traps..... *541
Motorship Sebastian, fire on not caused by steel exhaust pipe. Lisle..... 309
Multiple connector board..... *542

Nipple or stud vise *247
Note book, for your own..... *715
Notes, packing. Willey *41
Nuts, lock. Machinist Mate..... *40
Nuts, removing the frozen. Willey.... *425

Official uniforms for the merchant service. 540
Oil-can kinks *135

Packing notes. Willey *41
Packing troubles. Schaphorst 596
Patches, temporary pipe. Willey *248
Pipe patches, temporary. Willey..... *248
Planer clamps *306
Platform, boiler cleaning *136
Pneumatic drill adapted as a portable countersinking machine. Hicks..... *362
Portable floor light stand. Willey..... *598
Precaution against fire on a Diesel-engined ship 137
Preserving iron and steel..... 712
Propeller bearings, device for twin-screw. Raabe *543
Propeller shaft on board ship, formulas for determining the sag in wire used to aline the bearings of. Mason..... *424
Propellers, removal of. Haas 247
Proposed method of obtaining fresh water on ships..... 712
Pulley and fly-wheel puller. Willey..... *306
Pump cylinder, repairs on. Knoblauch.. *84
Pump, handy *247
Pump, repairs to evaporator ram. Blundun *134
Pump rod, broken circulating. Dell..... *597
Punch block, gasket *655

Quickly accessible drawer. Willey..... *653

Reach rod kinks *485
Reciprocating engine, return to the. Gibson 53
Reciprocating engine, return to the. London 5
Record ship completion. Haas 543
Removing frozen nuts. Willey *425
Removal of propellers. Haas 247
Repairs, emergency, to main check valve spindle. Dell *653
Repairs made on a cracked pump cylinder. Knoblauch *84
Repairs to evaporator ram pump. Blundun *134
Return lines, curing trouble from noisy. Lailer *597
Return to the reciprocating engine. Gibson 53
Return to the reciprocating engine. London 5
Rigging helps, handy. Willey *134
Riveting records, those 427
Rod packing cutter *246
Rod shear, home-made *653

Safety first kink *485
Sag in wire used to aline the bearings of propeller shafting on board ship, formulas for determining the. Mason..... 424
Salvaging torpedoed ships. Meredith.... 652
Saving hose on boiler tube cleaners. Lailer *655
Saw, close-quarter. Willey..... *599
Scaling tool, handy *426
Schooners, wooden auxiliary. Bryde.... 322
Scraper, cow-mouth *483
Scrapers *247
Sebastian motorship, fire on not caused by steel exhaust pipe. Lisle..... 309
Shaft coupling, improvised Dutchman for. *246
Shellac container. Willey *424
Ship completion, record. Haas..... 543
Ships, salvaging torpedoed Meredith... 652
Shovel handle, broken. Willey..... *715
Sight glass, keeping, clean. Willey..... *85
Slide valve, curious displacement of. Dell *596
Soft-faced hammer, improvised..... *424
Spindle, emergency repairs to main check valve. Dell *653
Spreader, bunker coal. Willey *362
Springs, use for old *541
Steam tables for condenser work..... 309
Steel expansion joint, welded. Nourse.. *426
Steel keys, facilitating the grinding down of 599
Stripped stud, emergency repairs to. Willey *306
Stud or nipple vise *247
Swing bracket, telephone..... *714

Temporary pipe patches. Willey..... *248
Test of triple-expansion marine engine, indicator. De Lorme 250
Three kinks that have proven successful. Dorthen *598
Telephone swing bracket..... *714
Telltale, make-up feed..... *713
Tightening key, kink for..... *714
Toggle clamp, long jaw. Willey..... *484
Tool for cleaning out threads..... *541
Tools, marking 134
Torpedoed ships, salvaging. Meredith... 652
Twin-screw propeller bearings, device for. Raabe *543
Traps, method of detecting leaky..... *541
Triple-expansion marine engine, indicator test of. De Lorme 250
Truss collar or ring. Dorthen *598

Uniforms for the merchant service, official 540
Uniforms, mercantile marine. Haas..... 364
Unique marine accident. Haas..... 87
Use for old springs *541
Use of telephone for finding "shorts" in electric wiring. Walker..... *85

Vise punch rig. Willey *597
Vise, solid jaw, attachment for. Willey.. *306
Vise, stud or nipple *247

Ware container, small *542
Welded steel expansion joint. Nourse.. *426
Who does the work? 543
Why he wasn't promoted. Willey 136
Wooden auxiliary schooners. Bryde.... 322
Work, learn to like your 424

EDITORIALS

A bigger shipbuilding programme..... 265
Advancing foreign trade..... 554
Air pumps, report on, by committee appointed by the North East Coast Institution 52
"All hail, American shipbuilders!"..... 437
American classification for American ships 148
American classification of American ships. 439
American merchant fleet 554
American shipbuilders making good..... 495
Americans as shipbuilders 553
An epoch-making launching 495
An heritage of the war 97
Annual meeting of Society of Naval Architects and Marine Engineers..... 609
Appointment of Charles M. Schwab as Director-General of the Emergency Fleet Corporation 265
Assembling yards, government 148

Ban on Foreign circulation of MARINE ENGINEERING 437
Bunker regulations, new set of..... 52
Buy Liberty Bonds 147

Charles M. Schwab appointed director of the Emergency Fleet Corporation..... 265
Circulation of MARINE ENGINEERING, ban on foreign 437
Classification for American ships, American 148
Classification of American ships..... 439
Coal in 1918, deficiency of..... 3
Combined steel and concrete ship..... 53
Community aid for shipbuilders..... 266
Concrete and steel ship, combined..... 53
Concrete ship programme, status of the.. 496
Concrete ships 322
Credit where credit is due..... 265

Deadweight and gross tonnage 1
Deficiency of coal in 1918 may amount to 130,000,000 tons 3
Delivery of ship machinery imperative... 377
Destroyers, need for more 610
Difficulties in merchant shipbuilding.... 1

Effect of the German U-boat raid..... 377
Employment men wanted by the Shipping Board 377
Encouragement for the juniors 97
Engines, hot bulb 553
Equipment, life saving, for Emergency Fleet 52

Fabricated method of shipbuilding proving a success..... 266
Fabricated shipbuilding..... 266
"Fail with ships and we fail utterly".... 147
Fair play for our flag..... 148
"For God's sake, hurry up!"..... 265
Foreign circulation of MARINE ENGINEERING, ban on..... 437
Foreign trade, advancing..... 554
Fourth Liberty Loan..... 553
Free port, San Francisco wants to be a.. 610
Fuel and our war-bred merchant ships.. 2

Getting the men to build the ships..... 51
Government assembling yards..... 148
Gross and deadweight tonnage..... 1

Hog Island shipyard..... 665
Hot bulb engines..... 553
Housing of shipyard workmen..... 52

Important notice..... 666

Juniors' prize papers..... 322

Launching of Hog Island's first ship.... 495
Liberty Bonds, buy..... 147
Liberty Loan clubs..... 553
Liberty Loan, Fourth..... 553
Life saving equipment for the Emergency Fleet 52
Lighthouse service..... 2

Machinery, ship, prompt delivery imperative 377
Marine wages are good..... 611
May shipbuilding records..... 377
Merchant fleet, American..... 554
Merchant ships, fuel for operating..... 2
Merchant shipbuilding, difficulties in..... 1
Merchant shipping losses, reduction of.. 321
More meddling..... 97
Motorships coming into their own..... 496

Naval architects' annual meeting..... 437
Naval expansion..... 1
Navy, the old sailing..... 554
Need for more destroyers..... 610
New set of bunker regulations..... 52
New York port improvements..... 665
New York, the port of..... 609
Notice regarding unauthorized agents.... 611
Nothing new under the sun..... 266

October was shipbuilding banner month. 611
Operation of the new shipyards..... 51

Paper, government restriction on..... 666
Passing of the world's cataclysm..... 665
Pennant winners..... 495

Port improvements, New York..... 665
Port of New York..... 609
Port, San Francisco wants to be free.... 610
Prizes for junior members of the Society of Naval Architects and Marine Engineers 97
Prize papers, the Juniors'..... 322
Progress in shipbuilding.....147, 321
Prompt delivery of ship machinery imperative 377

Quistconck, launching of Hog Island's first ship..... 495

Reduction of merchant shipping losses... 321
Removal notice..... 553
Report of commissioner of lighthouses.. 2
Resignation of Theodore E. Ferris..... 265

Sailing navy, the old..... 554
San Francisco wants to be free port..... 610
Ship machinery, prompt delivery imperative 377
Ships, concrete 322
"Ships, fail with, and we fail utterly".. 147
Ships, getting men to build..... 51
Ship's strain, strainagraph records..... 666
Ships, stringerless..... 611
Ships, what do they mean to us..... 555
Shipbuilders, all hail, American..... 437
Shipbuilders, Americans as..... 553
Shipbuilders making good, American.... 495
Shipbuilders must redouble their efforts.. 51
Shipbuilding banner month, October.... 611
Shipbuilding brought to a manufacturing process 97
Shipbuilding, difficulties in merchant.... 1
Shipbuilding, fabricated..... 266
Shipbuilding, fabricated method of proving a success..... 266
Shipbuilding programme, a bigger..... 265
Shipbuilding programme, community aid for 266
Shipbuilding, progress in.....147, 321
Shipbuilding records, May..... 377
Shipbuilding rivalry..... 321
Shipbuilding, speeding up of merchant.. 265
Shipbuilding, will keep up..... 665
Shipping Board Emergency Fleet Corporation, seeks employment managers..... 377
Shipping Board finds it necessary to ask aid of another branch of the government to investigate work..... 97
Shipping losses, merchant, reduction of. 321
Shipping tonnage by 1920..... 610
Shipyard, Hog Island..... 665
Shipyard workmen, housing of..... 52
Shipyard volunteer..... 97
Shipyards flying pennant flags..... 495
Shipyards, operation of the new..... 51
Shipyards, should business men help the transference of their skilled employees yards? 266
Shipyards, will close some wooden..... 666
Short cuts and innovations..... 148
Should business men help the transference of their skilled employees to shipyards? 266
Society of Naval Architects and Marine Engineers, annual meeting of..... 609
Society of Naval Architects and Marine Engineers, prize offered to junior members of the..... 97
Speeding up of merchant shipbuilding.... 265
Status of the concrete ship programme.. 496
Steel and concrete ship, combined..... 53
Steel requirements..... 495
Stop waste and practice self-denial..... 1
Strainagraph records ship's strain..... 666
Stringerless ships..... 611

Technical contributing..... 609
Theodore E. Ferris, resignation of..... 265
Tonnage, gross and deadweight..... 1
Tonnage launched from American shipyards in year..... 495
Tonnage, shipping, by 1920..... 610
Trade routes, to revive..... 665
Transportation facilities, unprecedented.. 554

U-boat raid, effect of the German..... 377
Uniform wage rate for world's sailors.. 666

Volunteer now..... 97

Wage rate for world's sailors, uniform.. 666
Wages are good, marine..... 611
Want New York free port..... 666
War, an heritage of the..... 97
War Industries Board discusses steel requirements 495
War Savings Stamps..... 1
What ships mean to us..... 555
Wooden shipyards, will close some..... 666

Yards, government assembling..... 148

ENGINEERING SPECIALTIES

Acetylene marine beacon, long-burning. Alexander Milburn Co. *660
Air cock, Victory lubricated. Victory Equipment Corporation *661
Air "Occluders" for use with condensers. Alberger Pump & Condenser Co..... *549
Air planers. Shipbuilders' Pneumatic Tool Co. *552
Air separator, "Stratton." Griscom-Russell Co. *433
Alternating-current arc welding machine. Electric Arc Cutting & Welding Co.... *720
Alumunite. Alumunite Manufacturing Co. *373
Anchor, stockless. Patrick J. Ryan, 30 Church Street, New York..... *550
Arc welding machine, alternating-current. Electric Arc Cutting & Welding Co.... *720

Baffles, boiler, of plastic material. Betson Plastic Fire Brick Co..... *259
Beacon, long-burning acetylene marine. Alexander Milburn Co..... *660
Belt conveyors, portable. Portable Machinery Co. *144
Boiler baffles of plastic material. Betson Plastic Fire Brick Co. *259
Boiler shell drill. Thos. H. Dallett Co... *315
Boring and turning mill built for arsenal work by Niles-Bement-Pond Co..... *492
Box corner staying machines. M. D. Knowlton Co. *605
Bucket for coaling ships, single line. Blaw-Knox Co..... *721

Calking machine, pneumatic, "Little Davis." Ingersoll-Rand Co..... *315
Centrifugal Pump, end suction. Wheeler Condenser & Engineering Co..... *261
Chain and swivel repair link. Cleveland Galvanized Works Co..... *260
Chain-operated wheel for valves. Babbitt Steam Specialty Co..... *373
Chain grip pipe vise. Gerolo Manufacturing Co. *262
Circuit Breaker, relay. Westinghouse Electric & Mfg. Co..... *604
Compressed air-operated tool for driving spikes, drift bolts and pins. McKiernan-Terry Drill Co. *492
Concrete surfacer, "Berg." Elevator Supplies Co. *662
Crane-equipped electric industrial truck. Cooler, multi-whirl. Griscom-Russell Co. *493
Elwell-Parker Electric Co..... *314

Dallett boiler shell drill. Thos. H. Dallett Co. *315
Double push-button switches. Crouse-Hinds Co. *434
Drift bolt driver for special work. Ingersoll-Rand *432
Drift bolt driver. Ingersoll-Rand Co.... *142
Drill, boiler shell. Thos. H. Dallett Co... *315
Drills and grinders, portable electric. Gilfillan Brothers' Smelting and Refining Co. *262
Drilling machine, wall radial. Lynd-Farquhar Co. *370

Electric Drills and Grinders, portable. Gilfillan Brothers' Smelting & Refining Co. *262
Electric foot warmer. Westinghouse Electric & Mfg. Co. *144
Electric mono-rail hoists for handling ashes *93
Electric seam welding machine. Thomson Electric Welding Co. *259
End suction centrifugal pump. Wheeler Condenser & Engineering Co..... *261
Engine, hoisting. J. S. Mundy Hoisting Engine Co. *94
Engines, hoisting. American Clay Machinery Co. *433
Evaporator, Lillie. Wheeler Condenser & Engineering Co. *143
Expansion joint. Alberger Pump & Condenser Co. *550
Extension boring and turning mill built for arsenal work by Niles-Bement-Pond Co. *492

Feed-water heater, marine, "Wainwright." Alberger Pump & Condenser Co..... *260
Fifty-inch swing lathe for propeller shaft work. Pittsburgh Machine Tool Co... *607
Fitting, vapor proof. Denison Electrical Fittings Co. *432
Fitting, valves, specialties. Crane Co.... *143
Flexible metallic packing, "John Crane." Crane Packing Co. *318
Floating frame reduction gears for ship propulsion. Westinghouse Electric & Mfg. Co. *660
Foot warmer, electric. Westinghouse Electric & Mfg. Co. *144

Geared turbines, small. Westinghouse Electric & Mfg. Co. *434
Gears, floating frame reduction, for ship propulsion *660
Generator, type 4-1,000 oxygen-hydrogen. International Oxygen Co. *48
Graphite Lubrication. Joseph Dixon Crucible Co. *662

Heater, marine feed water, "Wainwright." Alberger Pump & Condenser Co..... *260
Hoisting engine. J. S. Mundy Hoisting Engine Co. *94
Hoisting engines, shipping by trainloads. American Clay Machinery Co..... *433
Hoists for handling ashes, electric mono-rail *93
Hot wire measuring instrument. Westinghouse Electric & Mfg. Co..... *604

Improved centrifugal pump. Cameron Pump Works *663
Industrial truck, triple utility. Elwell-Parker Electric Co. *314
Life float, reversible. Cambridge Reversible Life Float, Inc..... *435
Lillie evaporator. Wheeler Condenser & Engineering Co. *143
Long-burning acetylene marine beacon. Alexander Milburn Co. *660

Making temperature trip the circuit breaker. Westinghouse Electric & Manufacturing Co. *604
Marine feed-water heater, "Wainwright." Alberger Pump & Condenser Co..... *260
Method of oil reclamation, DeLaval Separator Co. *720
Meters for wireless, high-frequency work. Westinghouse Electric & Manufacturing Co. *604
Motor switches, last word in. Crouse-Hinds Co. *606
Multiwhirl cooler. Griscom-Russell Co.. *493

Oil coolers, "Wainwright" turbine bearing. Alberger Pump & Condenser Co.. *372

Oil reclamation, method of, DeLaval Separator Co. DeLaval Separator Co. *720
Oxygen-hydrogen generator. International Oxygen Co. *48

Packing, flexible metallic, "John Crane." Crane Packing Co. *318
Packing, soft, flexible metallic for condensers. Crane Packing Co. *662
Paint, spray method of applying. Spray Engineering Co. 316
Panels for electric welding service, portable outlet. Westinghouse Electric & Manufacturing Co. *145
Pipe vise, chain grip. Gerolo Manufacturing Co. *262
Plate joggling press for use in shipyards. Southwark Foundry & Machine Co. *607
Pneumatic calking machine, "Little David." Ingersoll-Rand Co. *315
Portable belt conveyor, a new type of. Portable Machinery Co. *144
Portable electric drills and grinders. Gilfillan Brothers' Smelting and Refining Co. *261
Portable outlet panels for electric welding service. Westinghouse Electric & Manufacturing Co. *145
Press, plate joggling, for use in shipyards. Southwark Foundry & Machine Co. *607
Pressure governor for gas and liquid systems, new. General Electric Co. *493
Pump, end suction centrifugal. Wheeler Condenser & Engineering Co. *261
Pump, improved centrifugal. Cameron Pump Works *663
Pump, vertical rotative dry vacuum. Wheeler Condenser & Engineering Co. *144

Reduction gears, floating frame, for ship propulsion. Westinghouse Electric & Mfg. Co. *660
Reversing and control rudder. General Electric Co. *549
Rope, wire. Geo. C. Moon Co. *373
Rudder, reversing and control. General Electric Co. *549

Scoop conveyor, portable. Portable Machinery Co. *144
Seam welding machine, electric. Thomson Electric Welding Co. *259
Single line bucket for coaling ships. Blaw-Knox Co. *721
Soft flexible metallic packing for condensers. Crane Packing Co. *662
Spray method of applying paint. Spray Engineering Co. 316
Stockless anchor. Patrick J. Ryan, New York *551
Swing lathe for propeller shaft work, 50-inch. Pittsburgh Machine Tool Co. *607
Switches, double push button. Crouse-Hinds Co. *434
Switches, last word in small motor. Crouse-Hinds Co. *606
Swivel and chain repair link. Cleveland Galvanized Works Co. *260

Tool for driving spikes, drift bolts and pins, compressed air operated. McKiernan-Terry Drill Co. *492
Tower whirler. Dravo-Doyle Co. *372
Truck, crane-equipped electric industrial. Elwell-Parker Electric Co. *314
Truck, "high level." Orenstein-Arthur Koppel Co. 373
Turbines, small geared. Westinghouse Electric & Mfg. Co. *551
Turbo-generator unit. Westinghouse Electric & Manufacturing Co. *55

Vapor proof fitting. Denison Electrical Fittings Co. *432
Vertical rotative dry vacuum pump. Wheeler Condenser & Engineering Co. *144
Vise, chain grip pipe. Gerolo Mfg. Co. *262
Vise, Winan's new idea. Barnett Foundry & Machine Co. *492

Wainwright turbine bearing oil coolers. Alberger Pump & Condenser Co. *372
Wall radial drilling machine. Lynd-Farquhar Co. *370
Welding process for repairing or joining broken aluminum parts. Aluminite Mfg. Co. *373
Wheel for valves, chain-operated. Babbitt Steam Specialty Co. *373
Wire rope. Geo. C. Moon Co. *373
Wrench. Walworth Mfg. Co. *604

PARAGRAPHS

American foreign trade in September.. 71
Annual Motor Boat Show. 56

Board of Trade issues rules for concrete ships 103

Concrete ships, Board of Trade issues rules for. 103

Foreign trade in September, American... 71

Growth of the Shipping Board Emergency Fleet Corporation. 24

Loss of merchant tonnage. 5

Merchant tonnage, loss of. 5
Motor Boat Show, annual. 56

New records of ship machinery and production 717

Obituary....95, 145, 263, 375, 436, 494, 552, 608, 664
Oil shales reserved for the navy. 360

Personal..49, 95, 145, 263, 319, 375, 436, 494, 552, 608, 664
Post commandant needed for Junior Naval Reserve. 588

Record ship completion. Haas. 543
Rules for concrete ships, Board of Trade issues 103

Ship machinery and production, new records of. 717
Ships, structural steel. 6
Shipping Board Emergency Fleet Corporation, growth of the. 24
Steam preferred. 538
Storage of bituminous coal. 449
Structural steel for ships. 6

Test of rivetless ships 694
Tonnage, loss of merchant. 5

Who does the work? 543

QUESTIONS AND ANSWERS FOR MARINE ENGINEERS

Air pump broken, operation of ship with. 89
Angle of advance and angle of lead, difference between them 253
Angular advance of eccentric, measuring. 139

Babbitt metal, formula for. 486
Boiler, calculating evaporation of water in 138
Boiler, calculation of water level in. 428
Boiler, horsepower of. 253
Boiler, inspection of Scotch. 89
Boiler proportions. 310
Boiler, size and weight of Scotch. 487
Bracket, strength of. *716

Calculating evaporation of water in boiler. 138
Calculations for 3-ton revolving hand crane *310
Calking, parts of a ship requiring. 311
Cant frames, development of stern plating around the. *486
Capacity of circular tank. 89
Capacity of coal bunker. 43
Capacity of rectangular tank. 43
Cargo vessel, proportions of "ideal". 544
Circular tank, capacity of. 89
Coal bunker, capacity of. 43
Condensers, cooling surface, required. 429
Condensers, differences in, for reciprocating engines and turbines. 428
Cooling surface of condensers required.. 429
Crane, calculations for revolving hand... *310
Crank pin, pressure on, and rotative effect 139
Crank pin, procedure when high-pressure breaks 253
Crank shaft, twisting moments on a. 138
Cushioning engine piston 89

Design of eye pad and shackle. *366
Design of tugboat 253
Development of longitudinals *656
Development of stern plating around the cant frames *486
Diameter of donkey pump to get higher pressure 89
Difference between angle of advance and angle of lead 253
Differences in condensers for reciprocating engines and turbines 428
Distiller and evaporator, relative position of 89
Donkey pump, diameter to get higher pressure 89
Double-ported valve *88
Double-ported slide valve *600

Eccentric, measuring angular advance of. 139
Effect of unbalanced forces in reciprocating engines *429
Effects of changes in valve gear. 43
Engines, pressure and heat 253
Equilibrium ring on flat slide valve. *88
Evaporator and distiller, relative position of 89
Evaporation of water in boiler, calculating 138
Examinations, questions *428
Expansion, ratio of 88
Eye pad and shackle, design of *366

Feed heater tubes, remedy for sediment.. 88
Floors, strength of solid and bracket. 138
Formula for babbitt metal 486
Formula for computing size of main steam pipe 600

Gage cocks and safety plugs, rules for fitting 89

Harpin and ribband lengths to mark frame spacing, method of finding *252
Heat and pressure engines 253
Horsepower of boiler 253
Horsepower of engine 138
How to lay out shell expansion plan. 656
Hydroplane, highest speed attained by. 311

Inclined propeller shaft 311
Inspection of Scotch boiler 89
Installing engine in ship, method of. 656

Link motion, Stephenson *43
Longitudinals, development of. *656

Making up with salt feed 310
Marine technical publications. 601
Measuring angular advance of eccentric.. 139
Method of finding harpin and ribband lengths to mark frame spacing. *252
Method of installing engine in ship. 656

Operation of ship with air pump broken. 89

Parts of a ship requiring calking. 311
Piston, cushioning engine 89
Piston valves 43

Planking, projected length of normal thickness of wooden ship's *252
Plating around the cant frames, development of stern *486
Pressure and heat engines 253
Pressure on crank pin and rotative effect. 139
Pressure on crank pin to push or pull... *428
Procedure when high-pressure crank pin breaks 253
Projected length of normal thickness of wooden ship's planking *252
Propeller shaft, inclined 311
Proportions of "ideal" cargo vessel..... 544
Propulsion problem 252
Publications, marine technical 601

Radial type valve gear 43
Radiation, conduction and convection.... 429
Ratio of expansion 88
Reciprocating engines, effect of unbalanced forces in *429
Rectangular tank, capacity of 43
Relative position of distiller and evaporator 89
Remedy for sediment in feed-heater tubes. 88
Ribband lengths, to mark frame spacing, method of finding harpin and *252
Rule for tonnage of ship..... *600
Rules for fitting gage cocks and safety plugs 89

Safety plugs and gage cocks, rules for fitting 89
Sag of wire in 200-foot span 600
Saline solution, saturated 43
Salt feed, making up with 310
Saturated saline solution 43
Scotch boiler, inspection of 89
Sail position, maintenance costs effected by 428
Scotch boiler, size and weight of..... 487
Sediment in feed-heater tubes, remedy for 88
Shackle, design of eye pad and..... *366
Shell expansion plan, how to lay out..... 656
Size and weight of Scotch boiler..... 487
Slide valve, double ported *600
Slide valve, equilibrium ring on flat..... *88
Slip *600
Springs 311
Steam pipe, formula for computing size of main 600
Steering gear problem..... *544
Stephenson link motion *43
Strength of bracket..... *716
Strength of solid and bracket floors 138

Tank, capacity of circular 89
Tank, rectangular, capacity of..... 43
Tonnage of ship, rule for *600
Tonnage of vessels..... 367
Tugboat, design of 253
Twisting moments on a crank shaft..... 138

Valve adustment to provide cushioning of engine piston 89
Valve, double ported *88
Valve gear, effects of changes in..... 43
Valve gear, effect of Stephenson link motion upon 43
Valve gear, radial type 43
Valves, piston 43

Water level in boiler, calculation of..... 428
Wooden ship's planking, projected length of normal thickness of *252

TECHNICAL PUBLICATIONS

A Naval Engagement. Roberts..... 365
A Practical Course in Wooden Boat and Ship Building. Van Gaasbeek..... 545
Aldrich Marine Directory. New York 1918 83
American Bureau of Shipping, Great Lakes Department..... 365

Coast Pilot, United States Coast and Geodetic Survey..... 657
Composition of Technical Papers. Watt. 545
Concrete Engineers' Handbook. Hool and Johnson..... 487

Electric Welding Manual..... 365
Eye Hazards in Industrial Occupations. Berry 137

Finding and Stopping Waste in Modern Boiler Rooms. Harrison Safety Boiler Works 137

General List of Merchant Shipping..... 365

Heat. Roger..... 83
Hiring the Worker. Kelly..... 365
How Wooden Ships Are Built. Estep.. 427

Laying Off, or the Geometry of Shipbuilding. Attwood and Cooper..... 427

Manual for the Guidance of Apprentices on Training Ships..... 365
Maximum Base Prices, Differentials and Extras on Iron, Steel and Non-Ferrous Products 601

Naval Constructor, The. Simpson..... 427
Navigation. George L. Hosmer..... 427

Ports and Terminal Facilities. MacElwee 545
Practical Design of Marine Single-Ended and Double-Ended Boilers. Gray..... 601
Practical Marine Engineering. Dyson.. 487

Record of American and Foreign Shipping 365
Rust's Practical Tables for Navigators and Aviators. Ruse..... 601

Safeguarding the Gateways of Alaska and Her Waterways. Jones..... 365
Ship Construction and Calculations. Nicol. 717
Submarines: A List of References in the New York Public Library. Jameson.. 365
Steam Tables for Condenser Work. Wheeler Condenser & Engineering Co. 309
Strength of Ships. Bertram..... 487

The Elements of Navigation. Henderson. 545
The Submarine in War and Peace: Its Development and Possibilities. Lake. 601